Perceived Impact of Physician-in-Triage on Resident Education

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Emergency Department (ED) overcrowding is a problem that has deleterious consequences for both patients and providers. Complications from such a burden on the ED include prolonged wait times, patient dissatisfaction, decreased productivity, and increased patient mortality [[1] [2]]. The physician-in-triage (PIT) model has become increasingly popular in ED settings with results suggestive of a positive impact on ED throughput [[3][4][5][6]]. Our ED implemented a novel PIT, termed the Rapid Assessment Team (RAT), exclusively for patients arriving via emergency medical services (EMS). The objective of this study is to explore the impact of our PIT model on resident and attending perceptions of EM resident education and patient care.

We conducted an IRB approved, cross-sectional, anonymous online survey of EM resident and attending physicians in our ED. Our Department is affiliated with a four-year ACGME accredited residency training program. The survey, developed by our research team, utilized key competencies outlined in the ACGME EM Milestone Project [8](Figure 1). We selected ten competencies that we believed would be most influenced by the PIT model and asked correspondents to indicate their perception on these competencies and attitudes towards the PIT model using a five-point Likert scale ranging from 1 (strongly negative) to 5 (strongly positive).

Survey data obtained from resident and attendings was reviewed (86% and 66% of eligible respondents, respectively). Spearman rank order correlation was used to determine if perceived impact and attitudes toward the RAT differ by post-graduate year (PGY) for residents or years since completion of residency for attendings. Mann-Whitney U testing was used to determine if perceived impact and attitudes toward the RAT differed between residents and attendings and

those that worked in our emergency department prior to the implementation of the RAT and those that did not. Tables 1 and 2 show the responses from residents and attendings on selected competencies.

Overall, attendings and residents perceived the RAT as having no impact on surveyed competencies with the exception of disposition making, which residents viewed as having a positive impact (Median = 4 [IQR 3-4]). Comparing the two groups, residents were more likely to perceive that there was a negative impact on their medical knowledge ($U = 209.5$, $p = 0.022$) and that the PIT altered their decision making($U = 214.0$, $p = 0.046$). Overall impression of the effect on training was viewed positively by residents (4 [3-4]) and attendings (4 [3-4])

Residents overall had a positive attitude toward the RAT(4 [3-4]). Specifically, residents agreed or strongly agreed with the following statements about the RAT: improved the overall quality of patient care (4 [4-5]) and improved patient satisfaction with clinical services (4 [3-4]). Residents were neutral about the following statements about the RAT: improved medical education for residents (3 [2-3]); has altered my medical decision making (3 [2.5-4]); workup initiated by the RAT was consistent with what I would have done (3 [3-4]).

Attendings overall had a positive attitude toward the RAT (4 [3-4]). Specifically, attendings agreed or strongly agreed with the following statements about the PIT: improved the overall quality of patient care (4 [3-4]); improved patient satisfaction with clinical services (4 [3-4]); and workup initiated by the PIT was consistent with what I would have done (4 [3-4]). Attendings

felt neutral about the statement that the PIT improved medical education for residents (3 [2-3]) and the PIT altered medical decision making (3 [2-3]).

Attendings were more likely to agree that the workup completed by the PIT was consistent with what they would have done (U = 190.0, p = 0.009). Participants differed in their impression of the PIT only on the impact of the RAT on disposition making (U = 188.5, p = 0.029). Those that worked at our hospital prior to the RAT were more likely to agree with this statement (4 [3-4]) than those that started after initiation.

Our study has several limitations. This survey analyzed perceptions rather than objective findings which limits our ability to report on the true impact of our intervention. Single site data collection and a relatively small sample size may limit our generalizability. Selection bias may have influenced data as not all eligible physicians completed the survey.

In conclusion, our results suggest that there is no overall impact on resident competencies as perceived by resident and attending physicians. Not only was this model not perceived to detract from resident training but the overall perception was viewed favorably by all respondents. Future research in this area should focus on the objective impact of operational flow improvement efforts on resident education. Academic institutions considering the implementation of similar provider-in-triage models should consider the balance between efficient patient care and the perceived impact of such improvements on resident education and training.

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Figure 1. Online Survey Questions (Resident Form)

Table 1: Resident Perceptions of the Impact of the RAT on ACGME Competencies

Competency	**Strongly Negative**	**Negative**	**Neutral**	**Positive**	**Strongly Positive**
	n (%)	n (%)	n (%)	n (%)	n (%)
Recognition of critically ill patients	1 (4)	3 (12)	13 (52)	8 (32)	0 (0)
Performance of focused history and physical	0 (0)	5 (20)	15 (60)	5 (20)	0 (0)
Interpretation of diagnostic studies	0 (0)	3 (12)	16 (64)	6 (24)	0 (0)
Creation of differential diagnosis	2 (8)	8 (32)	13 (52)	2 (8)	0 (0)
Implementation of appropriate pharmacotherapy	1 (4)	3 (12)	14 (56)	7 (28)	0 (0)
Observation and reassessment of patients	1 (4)	2 (8)	12 (48)	10 (40)	0 (0)
Disposition making	1 (4)	1 (4)	9 (36)	11 (44)	3 (12)
Ability to multi task	0 (0)	0 (0)	15 (60)	8 (32)	2 (8)
Medical knowledge	0 (0)	10 (40)	12 (48)	3 (12)	0 (0)
Patient safety	0 (0)	2 (8)	14 (56)	8 (32)	1 (4)

Table 2: Attending Perceptions of the Impact of the RAT on ACGME Competencies

Competency	**Strongly Negative**	**Negative**	**Neutral**	**Positive**	**Strongly Positive**
	n (%)	n (%)	n (%)	n (%)	n (%)
Recognition of critically ill patients	0 (0)	1 (4)	20 (80)	3 (12)	1 (4)
Performance of focused history and physical	0 (0)	5 (20)	18 (72)	2 (8)	0 (0)
Interpretation of diagnostic studies	1 (4)	2 (8)	18 (72)	4 (16)	0 (0)
Creation of differential diagnosis	1 (4)	8 (32)	13 (52)	3 (12)	0 (0)
Implementation of appropriate pharmacotherapy	1 (4)	6 (24)	16 (64)	2 (8)	0 (0)
Observation and reassessment of patients	2 (8)	2 (8)	16 (64)	4 (16)	1 (4)
Disposition making	1 (4)	1 (4)	12 (48)	10 (40)	1 (4)
Ability to multi task	0 (0)	4 (16)	15 (60)	5 (20)	1 (4)
Medical knowledge	0 (0)	2 (8)	18 (72)	5 (20)	0 (0)
Patient safety	1 (4)	2 (8)	10 (40)	10 (40)	2 (8)

Please rate the impact in which the RAT had on various components of your education as a resident physician.

Strongly Negative	Negative	Neutral	Positive	Strongly Positive
1	2	3	4	5

1. Recognition of Critically Ill Patients
2. Performance of Focused History & Physical
3. Interpretation of Diagnostic Studies
4. Creation of Differential Diagnosis
5. Implementation of Appropriate Pharmacotherapy
6. Observation and reassessment of patients
7. Disposition Making
8. Ability to Multi Task
9. Medical Knowledge
10. Patient Safety

Please rate your agreement with the following statements.

Strongly Negative	Negative	Neutral	Positive	Strongly Positive
1	2	3	4	5

The RAT has improved medical education for residents.
The RAT has improved the overall quality of patient care in our Emergency Department.
The RAT has improved patient satisfaction with clinical services in our Emergency Department.
The RAT has improved patient throughput and overall workflow in our Emergency Department.

Figure 1